

What is claimed is:

1 1. An image transfer sheet, comprising:
2 a woven or non-woven web layer having on one side thereof
3 at least one adhesion layer, said web layer having impregnated
4 therein or coated thereon on the side opposite said adhesion
5 layer, or both impregnated and coated thereon on the side
6 opposite said adhesion layer, an image receiving formulation
7 comprising at least one binder and at least one dye retention
8 aid; wherein
9 said image receiving formulation is capable of heat
10 sealing an image upon the application of heat up to 220°C.

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1 2. The image transfer sheet according to claim 1,
2 wherein said image receiving formulation is present on said
3 web layer on the side opposite said adhesion layer.

1 3. The image transfer sheet according to claim 1,
2 wherein said binder is capable of melting upon heating and
3 encapsulating an image.

1 4. The image transfer sheet according to claim 1,
2 wherein said web layer comprises woven or non-woven synthetic
3 fibers.

1 5. The image transfer sheet according to claim 4,
2 wherein said web layer is capable of absorbing from 0% to 200%
3 by weight of said image receiving formulation based upon the
4 unimpregnated weight of the web layer.

1 6. The image transfer sheet according to claim 4,
2 wherein said synthetic fibers comprise at least one polymer

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3 selected from the group consisting of polyester, rayon, nylon,
4 polyolefin, polypropylene, and polyethylene.

1 7. The image transfer sheet according to claim 4,
2 wherein said synthetic fibers comprise polyester.

1 8. The image transfer sheet according to claim 1,
2 wherein an 8.5 x 11 inch sheet of said web layer has a weight
3 greater than about 0.01 ounce.

1 9. The image transfer sheet according to claim 1,
2 wherein an 8.5 x 11 inch sheet of said web layer has a weight
3 in the range of between about 0.01 ounce to about 5 ounces.

1 10. The image transfer sheet according to claim 1,
2 wherein said web layer is impregnated with said image
3 receiving formulation.

1 11. The image transfer sheet according to claim 1,
2 wherein in said image receiving formulation, said at least one
3 binder is an acrylic binder.

1 12. The image transfer sheet according to claim 1,
2 wherein said at least one dye retention aid is a cationic
3 polymer.

1 13. The image transfer sheet according to claim 1,
2 wherein said at least one dye retention aid is at least one
3 selected from the group consisting of a polyamide copolymer,
4 silica and PVA.

1 14. The image transfer sheet according to claim 12,
2 wherein said cationic polymer is a polydiallylmethylamine
3 hydrochloride resin.

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1 15. The image transfer sheet according to claim 1,
2 wherein said image receiving formulation further comprises an
3 opacifying agent.

1 16. The image transfer sheet according to claim 15,
2 wherein said opacifying agent is titanium dioxide.

1 17. A process for heat transferring an imaged area from
2 a transfer sheet to a receptor element, comprising the steps:
3 (a) providing an image transfer sheet according to claim
4 1;
5 (b) imaging the surface of said impregnated web layer or
6 web layer coated with said image receiving formulation;
7 (c) placing the imaged transfer sheet on top of a
8 receptor element, imaged side facing away from the receptor
9 element;
10 (d) optionally placing a non-stick sheet on top of said
11 imaged transfer sheet;
12 (e) applying heat to imaged transfer sheet.

1 18. The process according to claim 17, wherein said heat
2 is applied to the imaged side of said transfer sheet or
3 through the non-stick sheet, if present, or from the
4 non-imaged side of the transfer sheet through the receptor.

1 19. The process according to claim 17, wherein said heat
2 is applied at a temperature from about 110 to 220 °C.

1 20. A kit comprising:
2 an image transfer sheet according to claim 1; and
3 optionally instructions for using said transfer sheet
4 and/or a non-stick sheet.

1 21. An image transfer sheet, comprising:

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2 a support sheet having a first and a second surface;
3 at least one adhesion layer on the first surface of said
4 support sheet; and
5 a woven or non-woven web layer on said adhesion layer,
6 having impregnated therein or coated thereon on the side
7 opposite said adhesion layer or both impregnated and coated
8 thereon on the side opposite said adhesion layer, an image
9 receiving formulation comprising at least one binder and at
10 least one dye retention aid; wherein
11 said image receiving formulation is capable of heat
12 sealing the image upon the application of heat up to 220°C

1 22. The image transfer sheet according to claim 21,
2 wherein said binder is capable of melting upon heating and
3 encapsulating an image.

1 23. The image transfer sheet according to claim 21,
2 which further comprises an antistatic layer on the second
3 surface of said support sheet.

1 24. The image transfer sheet according to claim 21,
2 wherein said web layer comprises woven or non-woven synthetic
3 fibers.

1 25. The image transfer sheet according to claim 24,
2 wherein said web layer is capable of absorbing from 0% to 200%
3 by weight of said image receiving formulation based upon the
4 unimpregnated weight of the web layer.

1 26. The image transfer sheet according to claim 24,
2 wherein said synthetic fibers comprise at least one polymer
3 selected from the group consisting of polyester, rayon, nylon,
4 polyolefin, polypropylene, and polyethylene.

1 27. The image transfer sheet according to claim 24,
2 wherein said synthetic fibers comprise polyester.

1 28. The image transfer sheet according to claim 21,
2 wherein an 8.5 x 11 inch sheet of said web layer has a weight
3 greater than about 0.01 ounce.

1 29. The image transfer sheet according to claim 21,
2 wherein an 8.5 x 11 inch sheet of said web layer has a weight
3 in the range of between about 0.01 ounce to about 5 ounces.

1 30. The image transfer sheet according to claim 21,
2 wherein said web layer is impregnated with said image
3 receiving formulation.

1 31. The image transfer sheet according to claim 21,
2 wherein said at least one binder is an acrylate binder.

1 32. The image transfer sheet according to claim 21,
2 wherein said at least one dye retention aid is a cationic
3 polymer.

1 33. The image transfer sheet according to claim 21,
2 wherein said at least one dye retention aid is at least one

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3 selected from the group consisting of a polyamide copolymer,
4 silica and PVA.

1 34. The image transfer sheet according to claim 32,
2 wherein cationic polymer is a polydiallylmethylamine
3 hydrochloride resin.

1 35. The image transfer sheet according to claim 21,
2 wherein said image receiving formulation further comprises an
3 opacifying agent.

1 36. The image transfer sheet according to claim 35,
2 wherein said opacifying agent is titanium dioxide.

1 37. A process for heat transferring an imaged area from
2 a transfer sheet to a receptor element, comprising the steps:
3 (a) providing an image transfer sheet according to claim
4 21;

5 (b) imaging the surface of said transfer sheet on the
6 side opposite said adhesion layer;

7 (c) peeling said imaged web layer and adhesion layer
8 away from the support material;

9 (d) placing the imaged transfer sheet on top of a
10 receptor element, imaged side facing away from the receptor
11 element;

12 (e) optionally placing a non-stick sheet on top of said
13 imaged transfer sheet;

14 (f) applying heat to the imaged transfer sheet.

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1 38. The process according to claim 37, wherein said heat
2 is applied to the imaged side of said transfer sheet or
3 through the non-stick sheet, if present, or from the
4 non-imaged side of the transfer sheet through the receptor.

1 39. The process according to claim 37, wherein said heat
2 is applied at a temperature from about 110 to 220 °C.

1 40. A kit comprising:
2 an image transfer sheet according to claim 21; and
3 optionally instructions for using said transfer sheet
4 and/or a non-stick sheet.

1 41. The image transfer sheet according to claim 1,
2 wherein said image receiving formulation is added in an amount
3 of 1% to 200% by weight relative to the uncoated weight of the
4 web layer.

1 42. The image transfer sheet according to claim 21,
2 wherein said image receiving formulation is added in an amount
3 of 1% to 200% by weight relative to the uncoated weight of the
4 web layer.

1 43. The image transfer sheet according to claim 21,
2 wherein said adhesion layer has a dry coat weight of about 2
3 to about 40 g/m², preferably 10-30 g/m²; and, most preferably
4 15-25 g/m².

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1 44. The image transfer sheet according to claim 1,
2 wherein said adhesion layer has a has a dry coat weight of
3 about 2 to about 40 g/m², preferably 10-30 g/m²; and, most
4 preferably 15-25 g/m².

1 45. The image transfer sheet according to claim 21,
2 wherein said binder is capable of melting upon heating and
3 encapsulating an image.

1 46. An image transfer sheet, comprising:
2 a woven or non-woven web layer having on one side thereof
3 at least one adhesion layer, said web layer having impregnated
4 therein or coated thereon on the side opposite said adhesion
5 layer, or both impregnated and coated thereon on the side
6 opposite said adhesion layer, an image receiving formulation
7 comprising
8 at least one self-crosslinking polymer; and
9 at least one dye retention aid; wherein said image receiving
10 formulation is capable of heat sealing an image upon the
11 application of heat up to 220°C.

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1 47. The image transfer sheet according to claim 46,
2 wherein said self-crosslinking polymer is a self-crosslinking
3 ethylene vinyl acetate polymer.

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1 48. The image transfer sheet according to claim 46, said
2 image receiving formulation further comprising at least one
3 thermoplastic binder other than the self-crosslinking polymer.

1 49. The image transfer sheet according to claim 48,
2 wherein said at least one thermoplastic binder is an ethylene
3 vinyl acetate copolymer.

1 50. The image transfer sheet according to claim 46, said
2 at least one dye retention aid is a cationic polymer.

1 51. The image transfer sheet according to claim 46,
2 wherein said at least one dye retention aid is silica.

1 52. The image transfer sheet according to claim 46, said
2 image receiving formulation further comprising an opacifying
3 agent.

1 53. The image transfer sheet according to claim 46,
2 wherein said self-crosslinking polymer is present in an amount
3 of 15-40% by weight based upon the dry solids weight of the
4 formulation.

1 54. The image transfer sheet according to claim 50,
2 wherein said cationic polymer is present in an amount of 1-10%
3 by weight based upon the dry solids weight of the formulation.

1 55. The image transfer sheet according to claim 46,
2 further comprising a polyamide copolymer is present in an

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3 amount of 5-40% by weight based upon the dry solids weight of
4 the formulation.

1 56. The image transfer sheet according to claim 55,
2 wherein said polyamide copolymer is present in an amount of 5-
3 40% by weight based upon the dry solids weight of the
4 formulation.

1 57. The image transfer sheet according to claim 48,
2 wherein said thermoplastic polymer other than the self-
3 crosslinking polymer is present in an amount of 5-40% by
4 weight based upon the dry solids weight of the formulation.

1 58. The image transfer sheet according to claim 51,
2 wherein said silica is present in an amount of 5-60% by weight
3 based upon the dry solids weight of the formulation.

1 59. The image transfer sheet according to claim 46,
2 wherein said at least one dye retention aid is at least one
3 selected from the group consisting of a cationic polymer, a
4 polyamide copolymer, silica or PVA.

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2 60. The image transfer sheet according to claim 46,
3 wherein said image receiving formulation comprises:

4 15-40% by weight of at least one self-crosslinking
5 polymer;

6 5-40% by weight of at least one thermoplastic polymer
7 other than said self-crosslinking polymer;

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8 5-40% by weight of at least one polyamide copolymer;

9 1-10% by weight of at least one cationic polymer;

10 5-60% by weight of silica, wherein said % by weight is

11 based upon a 100% total dry weight of the composition.

1 61. The image transfer sheet according to claim 60,

2 wherein said image receiving formulation comprises:

3 25-35% by weight of at least one self-crosslinking

4 polymer;

5 10-30% by weight of at least one thermoplastic polymer

6 other than said self-crosslinking polymer;

7 10-30% by weight of at least one polyamide copolymer;

8 1-4% by weight of at least one cationic polymer; and

9 10-40% by weight of silica,

10 wherein said % by weight is based upon a 100% total dry weight

11 of the formulation.

1 62. The image transfer sheet according to claim 1,

2 further comprising at least one opaque layer between said

3 adhesion layer and said web layer.